CLAIMS

I claim:

1. In a mobile storage system including one or more movable storage units and a drive arrangement associated with each storage unit for moving the storage unit in response to manual operation of an actuator, the improvement comprising a torque limiting mechanism interposed between the actuator and the drive arrangement, wherein the torque limiting mechanism is operable to prevent application of an actuating force to the drive arrangement exceeding a predetermined threshold.

2. The improvement of claim 1, wherein the actuator includes a manually operable handle interconnected with the drive arrangement by means of an input shaft.

3. The improvement of claim 2, wherein the drive arrangement further includes a flexible drive element engaged with an input drive member and an output driven member, wherein the input shaft is mounted to the drive member such that rotation of the input shaft by manual operation of the handle results in rotation of the driven member through the drive member and the flexible drive element.

4. The improvement of claim 2, wherein the torque limiting mechanism includes an input member interconnected with the input shaft, and a force-transferring arrangement interposed between the handle and the input member for transferring an actuating force below the predetermined threshold from the handle to the input member and for preventing transfer of force above the predetermined threshold from the handle to the input member.

5. The improvement of claim 4, wherein the force-transferring arrangement comprises one or more selective engagement members engaged with the handle and with the input member.

6. The improvement of claim 5, further comprising a biasing element for urging each engagement member toward an engaged position in which each engagement member engages the handle with the input member, wherein application of a force to the handle above the predetermined threshold is operable to move each engagement member away from its engaged position against the force of the biasing element.

7. The improvement of claim 6, further comprising an adjustment arrangement associated with the biasing element for varying the force applied to the

engagement member so as to adjust the predetermined threshold of force which moves the engagement member away from the engaged position.

8. The improvement of claim 5, wherein the one or more selective engagement members comprise one or more spherical engagement members engaged with the handle and with the input member by means of engagement structure associated with the input member and with the handle, wherein each engagement member is normally in an engaged position in which the engagement member is engaged with the engagement structure of the input member and the handle.

9. The improvement of claim 8, further comprising a biasing element for urging each engagement member toward its engaged position.

10. The improvement of claim 8, wherein the handle is removably mounted to a hub and wherein the engagement structure associated with the handle is formed on the hub.

11. The improvement of claim 10, wherein the hub defines a passage within which the input shaft is received.

12. The improvement of claim 11, further comprising a retainer arrangement for retaining the hub on the input shaft, wherein the hub and the input member define spaced, facing surfaces within which are formed the engagement structure associated with the input member and the engagement structure associated with the handle.

13. The improvement of claim 4, wherein the input member is rigidly mounted to the input shaft and wherein the hub defines a passage within which the input shaft is received, and further comprising a retainer member engageable with the input shaft for maintaining the hub in engagement with the input shaft, and wherein the force-transferring arrangement is operable to selectively couple the hub to the input member.

14. The improvement of claim 4, wherein the force-transferring arrangement comprises a friction disc interposed between the handle and the input member.

15. The improvement of claim 14, further comprising biasing means for biasing the handle toward the input member so as to couple the handle to the input member through the friction disc.

16. The improvement of claim 15, wherein the handle is engaged with the input member through a threaded member engageable with the input member, and wherein the biasing means comprises a spring washer arrangement enable with the threaded member and with the handle, wherein adjustment of the threaded member relative to the input member functions to adjust the biasing force applied by the spring washer arrangement for varying the frictional engagement of the handle with the input member through the friction disc.

17. A drive arrangement for a mobile storage unit, comprising:

a drive member;

a driven member;

a flexible drive element engaged with the drive member and the driven member;

a manually operable actuator mounted to the mobile storage unit; and

a torque limiting mechanism interposed between the actuator and the drive member, wherein the torque limiting mechanism is operable to prevent transfer of force to the drive member from the actuator exceeding a predetermined threshold.

18. The drive arrangement of claim 17, wherein the drive member is interconnected with a rotatable input member and wherein the manually operable actuator is interconnected with a hub, and wherein the torque limiting mechanism is operable to selectively couple the hub with the input member.

19. The drive arrangement of claim 18, wherein the torque limiting mechanism comprises one or more engagement members movable between a normally engaged position in which the engagement members engage the input member with the hub, and a disengaged position in response to application of a force exceeding the predetermined threshold to the handle to disengage the input member and the hub.

20. The drive arrangement of claim 18, wherein the torque limiting mechanism comprises a friction engagement member interposed between the input member and the hub, wherein the frictional engagement member is operable to transfer force from the hub to the input member below a predetermined threshold, and wherein the frictional engagement member is operable to provide slippage of the hub relative to

the input member upon application of a force to the actuator exceeding the predetermined threshold.

21. A method of actuating a mechanical drive system interconnected with a mobile storage unit which includes a drive system and an actuator member, comprising the steps of:

selectively engaging the actuator member with the drive system when the actuator handle is subjected to a force below a predetermined threshold; and

disengaging the actuator member from the drive system when the force on the actuator member exceeds the predetermined threshold.

22. The method of claim 21, wherein the step of selectively engaging the actuator member with the drive system is carried out by releasably engaging one or more engagement members with an input member interconnected with the drive system and with a hub member interconnected with the actuator member.

23. The method of claim 22, further comprising the step of biasing each engagement member toward an engaged position in which the engagement member couples the hub to the input member, and wherein the step of selectively releasing engagement of the actuator member with the drive system is carried out by moving the one or more engagement members to a disengaged position to de-couple the hub and the input member while the one or more engagement members are biased toward the engaged position.

24. The method of claim 21, wherein the step of selectively engaging the actuator member with the drive system is carried out by operation of a frictional engagement member interconnected between the drive system and the actuator member, wherein the frictional engagement member is operable to transfer a rotational force from the actuator member to the drive system below a predetermined threshold, and for preventing transfer force from the actuator member to the drive system above the predetermined threshold.